

produced in a small hydrogen generator 9 from undesulfurized hydrocarbon feed in a conduit 6, and further alleges that the aforementioned hydrogen-rich reformat in conduits 12 and 14 are provided along with the undesulfurized hydrocarbon feed in conduit 4 to a hydrogen desulfurizer 5. The explanation continues that there is "a split feed" so that undesulfurized hydrocarbon is fed in conduit 6 to the reformer 9 by bypassing the hydrodesulfurizer 5. But then, the Examiner contends that reformat in the conduits 12 and 14 is fed along with undesulfurized hydrocarbon feed via conduit 4 to the desulfurizer 5. If as stated in the fourth from last line of the Summary that the hydrodesulfurizer is bypassed, then how can it receive the undesulfurized feed and reformat in the conduits 12, 14?

Restating the Examiner's position, it seems to be: first provide the undesulfurized feed along with H₂ recycle from the conduit 14 from chloride removal 3 to conduit 6 through furnace 7 and conduit 8 to the reform reactor 9, then, provide the H₂ recycle, which was made from undesulfurized fuel that bypassed the desulfurizer 5, along with undesulfurized feed, through the conduit 4 into the hydrodesulfurizer 5. The only way to achieve this is to first have the valves between 3, 4 and 6 set to flow toward the reformer 9, bypassing the desulfurizer 5, and then to block the valve between 3 and 6 so material flows through the conduit 4 and the hydrodesulfurizer 5.

Stated simply, if you bypass the hydrodesulfurizer, you bypass it! If it's bypassed, how can it receive anything, as required in lines 5 and 6.

The Examiner's notion of a split feed (some flow from three to six, and some flow from three to four) is totally unsupported in the reference. Since claim 1 of the reference must read on the disclosure, the disclosure cannot be assumed to include a split feed.

Should the thinking shift in a subsequent office action that the desulfurizer 5 might be in location B, C or D downstream of the reformer reactor, sketches provided in response to previous office actions indicate that the same conundrum occurs: then hydrogen-rich reformat is produced from undesulfurized hydrocarbon

feed (as in line 3 of claim 1) but the undesulfurized hydrocarbon feed is converted and in the reform reactor and no longer exists. Therefore, the undesulfurized hydrocarbon feed cannot be fed to the desulfurizer whenever the desulfurizer is downstream of the reactor. Stated simply, if the desulfurizer is downstream of the reform reactor, then the desulfurizer cannot receive undesulfurized hydrocarbon feed; it can't receive any hydrocarbon feed; it can only receive the reformat. Therefore, lines 5 and 6 of claim 1 can never be made out by Louder if the hydrodesulfurizer 5 is downstream of the reform reactor 9.

Claim 3 is a means analog of claim 1 and the same argument applies: if Louder can produce reformat from undesulfurized hydrocarbon feed as in line 4 of claim 3, Louder cannot feed reformat along with undesulfurized hydrocarbon feed to a desulfurizer as in lines 6 and 7 of claim 3. The same argument applies to claim 4. Therefore, reconsideration and allowance of claims 1, 3 and 4 over Louder is respectfully requested.

3. Claims 9, 10 and 12 are rejected as anticipated by Buswell et al (Buswell). The rejection contends that the "pre-oxidizer 154" of Buswell is "a small hydrogen generator". Herewith is the declaration of Antonio M. Vincitore, PhD, stating that preoxidizers "cause oxidation of a small amount of the hydrocarbon fuel in a feed containing shave gas thereby eliminating the oxygen by producing carbon dioxide and water....Such pre-oxidizers do not produce hydrogen....Element 154 is a pre-oxidizer...and does not produce hydrogen." Therefore, the premise of the rejection is factually incorrect. To maintain this rejection, credible evidence contradicting Dr. Vincitore's factual declaration must be provided.

The rejection is glaringly inconsistent. On page 4 of the Office Action, the first six lines state that "A first stream of hydrogen-containing reformat gas (stream leaving said generator 154)" and "undesulfurized hydrocarbon feed from said source (stream leaving said generator 154)". Element 154 cannot produce both hydrogen-containing reformat gas and undesulfurized hydrocarbon feed. Buswell, like Louder, utilizes feedback hydrogen (stream 11) which is the same as

the prior art described with respect to Fig. 1 in the present application, and includes a recycle compressor 156 (column 8, lines 55-64).

Claim 9 requires that the hydrogen supplied to the desulfurizer be generated separately from the hydrogen provided to the water-gas shift reactor. Claim 9 calls for first and second streams of hydrogen-containing reformat gas; the stream leaving the oxidizer 154 is not reformat gas; the only stream of reformat in Buswell is that found in the single stream 6, 7, 8, 9, 10 and 11.

Claims 10 and 12 depend from claim 9 and are patentable for the same reasons. Therefore, reconsideration and allowance of claims 9, 10, and 12 is hereby respectfully requested.

4,5. Claims 2 and 5-8 are rejected as obvious over Louder in view of Hershkowitz et al. Claims 2 and 5-8 depend either from claim 1 or claim 4 and are patentable for the same reasons. Therefore, reconsideration and allowance thereof is respectfully requested.

6. Claims 11 and 13 are rejected as obvious over Buswell in view of Hershkowitz et al. Claims 11 and 13 depend from claim 9 and are patentable for the same reasons. Therefore, reconsideration and allowance of claims 11 and 13 is respectfully requested.

Should the foregoing not be persuasive, a telephone interview is most earnestly solicited.

Respectfully submitted,



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